WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: OR4641

Title: Investigation of Groundwater Recharge and Agricultural Runoff through Willamette Silt, Oregon

Focus Categories: Groundwater, Management and Planning

Keywords: Groundwater-surface Water Interactions, Willamette Silt, Diffusion, Recharge, Groundwater

Start Date: 03/02/2001

End Date: 03/01/2002

Federal Funds: $15,000

Non-Federal Matching Funds: $31,302

Congressional District: 5th

Principal Investigator:
Roy Haggerty
Assistant Professor, Oregon State University

Abstract

It is proposed to study the recharge of groundwater through Willamette silt, Willamette Valley, Oregon. This study will be supportive of an ongoing study of nitrate and phosphate transport in the Willamette silt funded by the Oregon Department of Agriculture and will provide two products to understand Oregon's water problems. First, we will directly measure groundwater recharge and agricultural runoff through the Willamette silt, perhaps the most important geologic unit for water resource in western Oregon. We will employ chemicals released into the Pudding River as tracers. We will measure these tracers in the Pudding River within the field site on an ongoing study over a 1-yr period. Simultaneously, we will obtain concentration profiles for these tracers in the underlying Willamette silt. By obtaining and modeling the tracer profiles at 12 times over one year, we will obtain direct measurement of recharge and transport rates across the Willamette silt. These measurements, in conjunction with other data being obtained in the ODA study (i.e., the gradient and hydraulic properties of the sediment), we will obtain a good average vertical conductivity measurement at the field site location. Second, we will provide all the data from this and another concurrent study via the CWESt web page. The other data would not otherwise be made publicly available. These data will be of value to a variety of state and federal agencies.